

THE
BOSTON MEDICAL AND SURGICAL
JOURNAL.

VOL. VII.] WEDNESDAY, OCTOBER 10, 1832. [NO. 9.

THE TREATMENT OF GOUT.

Read at the Royal College of Physicians, in June, 1831, by SIR HENRY HALFORD, President.

So much has been written on the subject which I lay before you this evening, that I feel as if some apology were necessary for taking up your time with remarks upon the Gout. But I rest assured, that you will receive in good part the result of my long experience in the treatment of that disease; and that if I state to you that there is no malady to which I am called upon to administer, that I prescribe for with so much confidence in the resources of our art, as for gout, formerly the opprobrium medicorum, you will give me willingly a few moments of your attention.

I will not dwell upon the various seats of gout in the human frame. For though the terms Arthritis and Podagra would seem to limit the malady to the feet and the joints, we have seen it in almost every part of the human system. There are those who believe that they have observed it in the eye. I have certainly seen it in the kidney, in the urethra and prostate gland, and in the tonsils. One of our esteemed colleagues has suffered it there; and I remember an eminent physician in the country so harassed by it, and so disappointed by finding no effect from the most approved remedies for the Angina Tonsillaris, that at length he plunged a lancet into it; if, peradventure, there might be some deep-seated suppuration there, to which he should give an exit. No matter followed; but in a few minutes the gout attacked the ball of his great toe. The Angina was soon forgotten, and the new disease ran its course with all its accustomed severity.

With regard to the remedies for gout, my dependence is placed upon the colchicum. Under the common circumstances of an attack of gout in the extremities, I do not use it immediately, but wait a day or two, until the malady shall have fixed itself. I then direct the wine of the root, prepared according to the directions of the Pharmacopœia; and I do not hesitate to declare, that I have not known a single instance of any untoward effect from it. It often cures the disease without any manifest increase of any of the excretions. Sometimes it produces perspiration, and sometimes it acts as a diuretic—the two objects aimed at generally by a physician in the use of our common resources in the treatment of

this disease ; but so far is it from being prone to purge the body violently, as the *eau medicinale* often did, that I find it necessary, in most cases, to combine a small portion of the sulphate of magnesia with the wine, in the draught in which I administer it. The formula which I have found most useful is a saline draught with camphor mixture, a drachm of syrup of white poppies, and from 35 to 45 minims, not more, of the wine of the root of colchicum, at bed-time ; to be repeated in the morning with 25 drops only of the wine, and half a drachm of the syrup of poppies ; and in this dose a drachm of the sulphate of magnesia. It is necessary to repeat these draughts for three or four successive nights and mornings, and to follow its use by a pill containing three grains of an acetous extract of the colchicum (made by evaporating an infusion of the root in vinegar), and one or two grains of the *Pulv. Ipecac. Comp.*, and the same quantity of the *Extractum Colocynthis Comp.*, and to terminate the whole by a mild purgative.

It has been objected to the colchicum that it produces a temporary good effect only, and that the gout is apt to recur when treated with this medicine after a shorter interval than usual. Be it so for argument sake—yet surely the weight of three or four attacks of the disease, of three or four days' continuance each, not more, is hardly to be compared with the pressure of a six weeks' painful confinement in the spring, and one of equal duration at the latter end of the year, as was the case before the value of this remedy was known ; the paroxysms, moreover, terminating often by distortion and disfigurement of the joints by chalk stones—an evil which is now prevented almost universally by that control which the colchicum puts upon the inflammatory stage of a fit of gout. But my experience will not admit it to be true that the disease returns more quickly. On the contrary, when the liquid preparation has been followed by the acetous extract, I think I am fully justified in asserting that the disease is removed for as long an interval as usually intervened between the fits, when left, as it was left formerly, to patience and flannel.

I am not rash and inconsiderate enough to recommend this mode of treatment to you as a specific system for managing the gout in all its forms, and under all the circumstances of different constitutions, which may present themselves to you. The formula will require to be varied occasionally, and it may be proper in many instances of an enervated state of the frame, to re-invigorate it by a light preparation of the *Peruvian bark*, after the colchicum has done its duty—or in other instances to give two or three doses of the *Pil. Hydrargyri* at bed-time every night, in order to recall the bile into its proper channels, if the colchicum or the sedative with which it has been combined shall have produced ash-colored evacuations by the bowels, denoting an obstruction of the bile.

Of all the preparations of this valuable medicine, I prefer the infusion of the root in Sherry wine. A preparation has been made, and is in frequent use, in the manner of an infusion of the seeds in preference to the root ; but this has appeared to me to be apt to create an insupportable nausea, such an one as I have seen follow Wilson's tincture for the gout, and the *eau medicinale*. When such an effect has once followed, it is in vain that you request the patient to have recourse to it again. He will answer you, that he would rather endure his disease in all its

severity than subject himself to the misery of such a remedy. This answer I have heard given to a proposal to administer the digitalis, when it had once affected the stomach in this manner—even when it had in one patient evacuated water from the chest in three successive attacks of hydrothorax; and in another controlled a dangerous affection of the heart for several years. No—these patients both declared that they would rather die than swallow one dose of digitalis more.

Before I dismiss the subject of colchicum, I must add that the use of this vegetable in gout is by no means new; for it is recommended by Alexander of Tralles, a city of Lydia, in the sixth century, as a remedy for this disease, not under the name of colchicum, indeed, but of hermodactyls. Now the hermodactyls and the roots of colchicum are the same, as you will observe by a comparison of the specimens on the table. Being anxious to obtain some hermodactyls, I availed myself of the good offices of one of the king's messengers, and purchased those before you in the market at Constantinople. They appear to be the same vegetable root as Sir G. Blane has stated on the authority of Sir Joseph Banks: though our estimable colleague, Dr. J. A. Wilson, is of opinion that there is a difference between them. I have not yet infused them in wine, but intend to do so immediately, and to try their efficacy upon gout in the same manner as I have prescribed the colchicum.

But it is not enough to state what I have found the most easy and effectual method of treating a fit of the gout, unless at the same time I lay before you the manner by which I attempt to prevent an attack.

As to medicine, I have had, incomparably, the most satisfaction in giving a few grains of rhubarb and double the quantity of the carbonate of magnesia every day, either at bed-time or early in the morning; or, under evident weakness of the powers of digestion, half an ounce of the compound tincture of rhubarb with fifteen grains of the carbonate of potash, in some light bitter infusion, daily, before the principal meal. The coarser purgatives should be carefully avoided; as I have often known a strong dose of physic, as well as a bleeding, aggravate a mere slight indication of gout into a severe decided fit.

But the management of himself and of his habits, on the part of the patient, is of more importance in keeping off this malady than medicine. His diet must be restricted, and he must dine at an earlier hour than is the custom at present amongst the higher ranks of society; his exercise must be gentle, but regular; his mind must be kept free from solicitude and care; he must avoid intense study,* and he must be chaste. The word which Pliny uses to express this item of precaution is a remarkable one, and, as far as I remember at this moment, peculiar to himself—it is *sanctitas*. He remarks of a friend of his, a martyr to the gout, that 'Pedum dolorem fregit abstinencia, et sanctitate.' This point of conduct may have been thought important in the eyes of the Roman, in consequence of what Hippocrates has remarked in the 30th Aphorism of the 6th Section, relative to the non-appearance of gout before puberty, Παις εὐ ποδαγρία, πρὸ τοῦ ἀρροδισιασμοῦ, especially as his own Celsus had adopted and recorded the same opinion. Ea raro vel castratos, ve pueros ante feminae coitum tentat.

* Sydenham, a great sufferer by the gout, remarks, 'Quoties me ad huc studia scilicet, toties et Podagra recurrerat.'

Be this as it may, I venture to say that the caution is worth observing ; for nothing enervates the system so much as this indulgence, especially in excess ; and an enervated state of the body is that which renders it most assailable by gout.

I have only to add, that I have seen the best possible effect, in a great many instances, from the use of the waters of Aix la Chapelle, in restoring their healthy tone to the knees and ankles, enfeebled or stiffened by repeated fits of the gout.

THE HELONIAS ERYTHROSPERMA OF MICHAUX.

On the Medicinal Powers of the Helonias Erythrosperma of Michaux.

By WILLIAM TULLY, M.D., Professor of Materia Medica and Therapeutics in the Medical Institution of Yale College.

[Communicated for the Boston Medical and Surgical Journal.]

As my last communication was upon a *pure and simple narcotic*, I shall follow it with an essay upon another indigenous article of a similar character, viz. the *HELONIAS ERYTHROSPERMA* of Michaux ; the *Helonias lata* of the Botanical Magazine ; the *Melanthium latum* of Willdenow ; the *Melanthium Phalangoides* of Laellarck ; the *Melanthium Muscitoricum* of Walter ; and the *Anthericum subtrigynum* of Jacquin. This plant belongs to the Natural Order *Melanthaceæ* of Robert Brown ; the *Junci* or *Janceæ* of Jussieu and others ; and the *Coronariæ* of Linnæus. Its only popular appellation (at least, that I have ever heard) is *Fly-poison*. It grows in various places in the Southern and Middle States ; and, I doubt not, might be successfully cultivated in favorable places in the Northern States. The name *Helonias* is said to be derived from the Greek *helos*, a marsh, because many of the species of this genus grow in boggy and wet situations.

The root of the *Helonias erythrosperma* is bulbous, but is mostly made up of a sort of husks, the solid central part being very small in proportion to these husks. Both the husks and the central part have the same taste, though in the husks it is considerably weaker. I have always used both of these parts in my officinal preparations. This root has been long known to be an active narcotic. The trivial name imposed upon it by Walter, viz. *Muscitoricum*, which was perhaps a mere translation of its popular appellation (or possibly its popular appellation may have been a translation of Walter's trivial name), undoubtedly has reference to its powers. James Mease, M.D. in his edition of Willich's Domestic Encyclopædia, published in Philadelphia in 1803, says, on the authority of William Bartram, that 'this plant possesses deleterious qualities, and is seldom or never eaten by deer or cattle.' He adds, 'a strong decoction of it sweetened, is used to kill flies ;' and 'rats are also destroyed by it.' Dr. William Meigs Haud, in his 'House Surgeon and Physician,' published in New Haven, Ct. in 1820, says, 'this root is a poison of that kind called by physicians narcotic. It is capable of stupefying insects, and even rats. It is a useful agent belonging to that class of articles in which opium, foxglove, thorn-apple, etc. are placed. It should not be

used except by physicians. It may be reduced to a pulp, in a mortar, with honey, molasses, or syrup of sugar; or it may be given in the form of infusion, and probably of uncture.' James McBride, M.D. late of Charleston, S. C. in Elliott's 'Sketch of the Botany of South Carolina and Georgia,' published in 1821, says, 'this plant is a narcotic poison, and is employed in some families for destroying the house fly. The bulbs are triturated and mixed with molasses or honey, and the preparation is spread upon plates, and placed in parts of the house most infested. The flies are soon attracted, and the poison takes effect while they are sipping it. They are perceived to stand unsteadily, totter, and fall supine. Unless swept into the fire, or otherwise destroyed, the flies revive in the course of twenty-four hours.' John Torrey, M.D. in his 'Flora of the Northern and Middle Sections of the United States,' published in New York in 1824, says, 'this plant is a narcotic poison, and is used in the Southern States for destroying flies.'

Several years ago, through the agency of my friend Isaac Branch, M.D. of Abbeville, S. C., I procured a considerable quantity of the root of this plant, and immediately commenced an investigation of its powers, in my customary manner, and uniformly with the following results. In about two hours after a sufficient dose of an alcoholic tincture (prepared in the manner hereafter to be specified), a glow is usually felt in the epigastric region, apparently referrible to the stomach itself, accompanied with an occasional sensation of flashes of heat throughout the whole system. Next the sight is affected: there is a sensation of too much light, accompanied with indistinct vision; and on sudden and considerable motion of the head, the patient is almost blind. The symptoms increase rapidly, and very soon there are vertigo and slight darting pains in the head, an indescribable sensation in the epigastrium, with a feeling as if respiration were about to cease; the pulse (without any previous increase of strength) becomes weak and quite unfrequent; the extremities are cold, and much exertion produces complete blindness for the time being. Next follows nausea and commonly vomiting, but without any relief of the previous symptoms. Subsequently the patient has sensations of heat and cold alternately, which are more particularly referred to the epigastric region; the pulse becomes small as well as weak, and is sometimes as infrequent as forty beats in a minute. In four or five hours, all the symptoms commonly reach their height; and in seven or eight they commonly disappear entirely, and without any inconvenient consequences whatever. It will be perceived that the foregoing constitutes the operative effects of as large a dose as can be conveniently taken by a person in health, as a mere experiment.

In 1829, Dr. Branch, without any knowledge of the results to which I had arrived, prepared, at my suggestion, a saturated tincture of this article, and made a single experiment upon himself, with as large a dose as a fluidrachm at once. In his own words, the circumstances were as follows. 'At about eleven o'clock, A. M.,' says he, 'I took a teaspoonful of the saturated tincture. Half an hour after twelve, I dined heartily. At one o'clock, P. M., I experienced a genial glow in the region of my stomach, with occasional flashes of heat, and at the same time my eyes were slightly affected. It seemed as if the pupil admitted

too much light; although, upon examination, it did not appear to be dilated. If I turned my head suddenly around, I became almost blind. At half after one o'clock, P. M., the symptoms above mentioned were considerably increased. I felt an indescribable distressing sensation in the epigastric region; my extremities were cold; my pulse at the wrist weak, hardly perceptible, and about sixty beats in a minute. At this time I walked out, but before I had proceeded two hundred yards I became entirely blind. Upon this, I stopped a short time, when my sight gradually returned, so that I proceeded to my apartment. After this, I immediately became sick at my stomach, and rejected my dinner, which appeared as if in a state of fermentation. I did not observe that the act of vomiting at all relieved the existing symptoms. After this, I had sensations of heat and cold in the region of the stomach; slight pains in the head, which were accompanied by diminution of sight and vertigo on moving the head suddenly; together with cold extremities from the first operation of the medicine. At three o'clock, P. M., the pulse was very small, and only about forty beats in a minute. Half an hour after three, the symptoms were at their height; and at six they had all pretty much disappeared, the pulse being about seventy in a minute, which is about five beats less than their natural standard, and I felt tolerably well. At seven, P. M., I eat a hearty supper, and no bad consequences resulted from the experiment.' Dr. Branch says, 'you will observe that I took nothing to obviate any of the symptoms, it being my determination to let them take their course.' He says further, 'I do not regret making the experiment, although I have no disposition to repeat it. My opinion is, that two teaspoonfuls would have put out my lamp.'

A friend and correspondent, to whom I had recommended this article as a substitute for the *hydrocyanic acid*, says, 'I was called to visit a woman who was laboring under a severe catarrhal affection. She complained of urgent pain, not only in her back, but in both her upper and lower extremities, which resembled rheumatism. She had pain also in the region of her stomach. Her pulse was frequent, rather full, but entirely destitute of any preternatural strength. Although perfectly aware that the disease was not true rheumatism' (a complaint in which this agent has been supposed to be valuable), 'still I administered a teaspoonful of a saturated proof-spirit tincture of the *Helonias erythrosperma*. In the course of two hours I called again, and found my patient considerably agitated by fear. She said she could hardly breathe—that she experienced an indescribable sensation in her head—and was occasionally almost blind. She complained of cold extremities—her pulse was weak, and not more than fifty beats in a minute—nausea soon followed, and not long after a severe paroxysm of vomiting took place. All these symptoms were readily and easily removed by opium, camphor, and carbonate of ammonia—and with them, the disease under which she labored absolutely and entirely disappeared.'

The only certain and positive conclusions that can be drawn from the foregoing statements of the obvious and prominent operative effects of the *Helonias erythrosperma*, are, that it is a highly active, and (for aught that appears) a pure narcotic. The circumstances that it immediately renders the pulse weak, small, and quite infrequent; and that its opera-

tion is so transient, seem to evince that it possesses no true stimulant, and certainly no tonic powers. This I have verified by the observation of its effects in small and frequently repeated doses. The vomiting which it produces seems to be the mere consequence of its narcotic operation upon the brain. No cathartic effect from it has ever, to my knowledge, been noticed; nor any cholagogue, expectorant, diaphoretic, diuretic, nor emmenagogue operations; nor is it probable that any one of these is to be looked for, from its continued use. However, from the known powers of some other articles which, in botanical affinity, are very nearly allied to this plant, I am not entirely without anticipation that it may yet prove to be deobstruent in some respects, as well as narcotic; and that, of the several parts of a deobstruent operation, it will at least be found to be resolvent, i. e. capable, by internal use, of obviating directly certain acute and sub-acute atonic inflammations, particularly of the arthritic sort. Indeed, it has already acquired the popular reputation of being 'good for rheumatism.' This anticipation, it is true, is derived rather from its botanical affinities than from any precise and definite observations that have ever yet been made by any adequate judge of its real effects. In my remarks upon the *Gelsemium nitidum*, I have explained how I imagine the pure narcotics may, under certain circumstances, obviate and remove mere irritative atonic inflammations, by virtue of their antirritant operation merely; and perhaps this is all that is in reality to be expected from this article.

The narcotic operation of this article being so pure and intense, I have employed it, in some ten or a dozen cases, as a substitute for the *hydrocyanic acid*; and, as far as I was able to judge, with very satisfactory effects, quite as satisfactory as I ever experienced from that acid. I have some reason to suspect that it is not quite so manageable as the *Gelsemium*, since, in one case at least, while I was gradually increasing my dose, and carefully watching for operative effects, by which I might regulate its future size, symptoms of narcosis, that were somewhat urgent for the time being, took place suddenly. The symptoms in question were, however, very speedily and perfectly relieved by one or two doses of French brandy but very little diluted; but the patient experienced some alarm, which was unpleasant.

It is not yet ascertained whether water or alcohol, or a mixture of the two, is the best menstruum for the active principle or principles of this article. I have never employed any other preparation than the alcoholic tincture; and this I have found to be quite active enough, even in small doses. The following is my formula:—

Tinctura Heloniadis Erythrosperma.

R. Radicis Heloniadis erythrospermæ contusæ uncias quatuor,
Alcoholis officinalis (gravitatis .835) octantem unum et dimidium.
Misce et macera per hebdomedam, et exprimens cola.

Of this preparation, the commencing dose should seldom be more than ten minims; but it should always be gradually increased till some operative effects are manifest. From twenty to thirty minims have commonly been the quantity that I have found necessary. The periods of repetition should be from four to six, and sometimes even eight times, in the

twenty-four hours, according to the nature and urgency of the symptoms, and the susceptibility of the patient.

As is the fact with the *Gelsemium*, I believe the operation of the *Helonias* is greatly assisted by conjunction with opium, in most cases; and, in many, by conjunction with stimulants or tonics. On the other hand, I have made sufficient observations upon the solitary effects of opium, and also of stimulants and tonics, in the cases to which I consider this article adapted, to be well satisfied that it is a valuable addition to the agents just mentioned. When this article is given in conjunction with these agents, a patient will commonly be able to take a much larger quantity of it without any disagreeable operation upon the brain; and he will require a less quantity of opium, in order to produce the desired degree of effect from that remedy.

As the only deleterious operation of the *Helonias* seems to be purely narcotic; and as an excessive but pure narcotic operation is the most effectually relieved by the simple stimulants, in conjunction with the stimulant and nerve narcotics, it need hardly be mentioned that capsicum, ammonia, alcohol, wine, and opium, are to be considered as the appropriate remedies for the excessive effects of this article.

The diseases in which I have known this article employed, and found useful, are the same in which the *Gelsemium* is recommended. It appears to me that there can be no rational doubt, that an article possessing such decided activity, must, on proper investigation, prove to be a valuable medicinal agent, in a greater or less number of cases, though it may not yet be precisely determined what particular complaints it is capable of controlling the most effectually.

Method of obtaining the Vegetable Alkali Sanguinarine, which is treated of in Volume VI. Page 245 of the Boston Medical and Surgical Journal.

For the best process for obtaining the vegetable alkali *Sanguinarine*, I am indebted to Mr. Augustus A. Hayes, of Windsor, Vermont, the discoverer of the principle in question. It is as follows. 'Macerate the bruised root in about three times its bulk of cold rain water, previously acidulated with one eightieth of its weight of strong sulphuric acid. Allow the mixture to remain three or four days in a cool room; then decant and filter the liquid, and repeat the process, using a more dilute acid. The filtered liquid contains an acidulous sulphate of the alkali' (*Sanguinarine*), 'in solution with other vegetable principles. Render the clear liquid slightly alkaline by adding a' (watery) 'solution of pure ammonia. Allow the bulky precipitate to subside. Decant the supernatant fluid, and wash the precipitate, placed on a filter, with water rendered slightly alkaline by ammonia, till it passes colorless. A small quantity of cold rain water will then remove the last portions of the ammonia, and the filter with its contents may be then dried as soon as possible, taking care that the temperature does not exceed 212 deg. Fahrenheit. When dry, macerate in alcohol, at the common temperature of the atmosphere, filter the fluid, and wash' (the residuum) 'with alcohol as long as it dissolves

anything. Put the liquid into a retort, and distil off three fourths of its bulk. Pour the remainder into about eight times its bulk of cold rain water. Collect and wash the precipitate :—it is *Sanguinarine*.'

The process for the preparation of *Sanguinarine*, which is given in Professor Silliman's Chemistry, is as follows, viz. : 'Digest the bruised root' (of *Sanguinaria Canadensis*) 'in three parts of cold diluted sulphuric acid (water ten, acid one). After twenty-four hours, decant the liquid ; and repeat the operations twice, using water but slightly acidulated. Mix the liquors and filter ; and to the clear red liquor which passes, add a' (watery) 'solution of ammonia as long as it occasions precipitation. Decant the fluid after subsidence, and wash the brown precipitate in cold water. It is *Sanguinarine*, combined with extractive and coloring matter, and mixed with some earths. Dissolve the soluble part in warm alcohol, and wash' (the residuum) 'with the same. Distil the clear liquid from a glass retort placed in a vapor bath. When the solution becomes turbid by concentration, it must be decanted while hot, into cylindrical vessels, one half filled with pure water. The alkali is precipitated in the form of a yellowish white bulky powder. It is mixed with a portion of a substance insoluble in diluted acids, and resembling resin. By dissolving the soluble part in muriatic' (hydrochloric) 'acid, with ten of water, precipitating by ammonia, and treating as above, the alkali is obtained pure. It should be washed, and collected in covered vessels.'

This, it will be perceived, is essentially, indeed almost identically the same process which I have employed. Where it differs, I do not think it is for the better, and probably not for the worse. I am informed by Mr. Hayes, that the process detailed by Dr. Dana, published in the Annals of the Lyceum of New York, and republished in the 22d No. of the New York Medical and Physical Journal (to which it is not in my power to refer at present), is imperfect, and at least will obtain only a minute quantity of the alkali. I have now no recollection of the details of the formula in question.

I shall only add, at this time, that the period of collecting the root of *Sanguinaria Canadensis* very materially influences the quantity of *Sanguinarine* that may be obtained from it. When it is collected in the autumn, after the decay of the leaves, it affords a much larger quantity of the alkali than when it is collected in the spring ; and I have reason to believe that it affords more, when collected at this season, than when collected at any other except the autumn.

September 24, 1832.

REMARKS ON IRRITABILITY AND TORPOR.

BY THOMAS MINER, M.D.

[Communicated for the Boston Medical and Surgical Journal.]

THE extremes of irritability and of torpor, as they have frequently been met with in the irregular fevers of the interior of New England during the present century, shed more light upon epidemic cholera and other malignant diseases, than is to be found in all the writings of Europeans which we are in the habit of reading in this country. Cases of dysentery

have been often seen, in which the system was so irritable that opium alone accomplished more than all other remedies. In these instances, a single grain of calomel has sometimes been found to evacuate the bowels a dozen times, though the patient at the same time was taking from fifteen to twenty grains of opium a day. This is the extreme of irritability and debility, in which all evacuation and reduction is injurious, and liable to be fatal. Other varieties of dysentery have been witnessed, in which five grains of opium an hour would not restrain the diarrhoea, or make any very sensible impression either for the better or worse. These cases were the extreme of torpor, and often admitted doses of calomel in the early stage, varying from a scruple to a drachm, assisted by essential oils, aromatics, capsicum, alcohol, and a moderate, regular use of opium.

It is easy to see that something more than the name of the disease, or even its being a mild or a severe case, is necessary to make out our indications, when the same malady is liable to appear in such opposite forms. An accurate attention to the preponderance of irritability or of torpor will reconcile much of the clashing and seemingly contradictory testimony, concerning the apparent success of various and opposite practice in the same nosological disease. It will also show how the wildest treatment very often makes but little impression, for the present, in the torpor of cholera. If this torpor has not been of long duration, and the actual debility is not extreme, it is occasionally removed by any sudden shock that is not so violent as to extinguish the remaining vitality. But when both exhaustion and torpor are very great, as is usually the fact in sinking typhus, and not unfrequently also in cholera, the patient sinks instantly after any considerable depletion and evacuation, and commonly falls never to rise again. After bleeding he faints, and sometimes dies, before the ligature is taken from the arm.

Torpor sometimes may occur in entonic diseases, and thus counterfeit debility, as in the depressed pulse of active pleurisy. This, however, is never the case in wide-spreading, malignant epidemics; as they have been always, through all periods of medical history, of an atonic character. No extensive epidemic can be found in the annals of medicine (the small-pox and other exanthemata being probably the only possible exceptions) in which the state of the system was not typhoid, atonic, or asthenic. These general rules, and the experience and observation which have been accumulating since the days of Hippocrates, seem to have been almost entirely overlooked in those parts of the world in which cholera has prevailed. This new disease seems to have taken the profession by surprise. It has hitherto prevailed, in our country at least, in cities where low, sinking, torpid diseases had been uncommon, and where the principles of their management, if not absolutely unknown, had rarely been put in practice. The consequence has been, that no one plan or general system has been regularly followed or fairly tried. This is evident from the various practice of the different hospitals, and the vacillating, indecisive treatment at the same hospital, as well as opposite and contradictory management in the same patient. It is believed, that in a single case, ice and calomel, brandy and bleeding, have often been resorted to, within the course of an hour. Some physicians appear to be suspicious of everything, sceptical of everything, and fearful of everything, except

bleeding and death. No sooner are the evacuations checked by opium, than they must be restored by cathartics: the moment reaction begins, its consequences are anticipated by venesection or leeches. At the very first, congestion, which is always the result of local or general debility, is so much dreaded, that it is to be prevented by increasing this very debility by copious depletion, instead of restoring tone to the system.

Our shipmasters, who have no theory of congestion, or of internal inflammation, or fear of the reaction that they may produce, have certainly had the best success, by early treating their subjects just as they would do in cases of common cholera, with opium, essential oils, alcohol, and external heat. The practitioners of the British East India Company appear to have saved the next greatest proportion, and lose only one in six or seven of their patients. They pursue the same plan with the shipmasters, except that they generally add calomel to their opium, which the torpor of the liver seems to require, and often employ the lancet. Depletion is, however, a doubtful remedy, and, according to Dr. James Johnson, should be only employed at the very access. Except upon the principle that any sudden and strong impression sometimes relieves, it is inconceivable how bleeding can ever be of any service, only that it may occasionally increase the susceptibility of the system to other remedies. It is, nevertheless, in every acute atonic disease, a hazardous operation, of very questionable utility; and when indiscriminately resorted to, is liable to do more injury than any one measure that is likely to be adopted.

General rules only can be given in writing, or be taught by the professor. Their application depends upon the knowledge, skill, and tact of the individual practitioner. It is impossible to say of a case which has not been seen, whether the extreme torpor of cholera, or of any other malignant disease, would be best combated by large doses of calomel, or of oil of turpentine, or of mineral solution, or of capsicum, or of essential oils, or of alcohol, &c.; or how far they are to be assisted by opium and other supporting agents. Extreme irritation is occasionally found to alternate with extreme torpor in the same patient. The case, elsewhere mentioned, of the patient whose pulse was only twenty-seven beats in a minute, and in twelve hours afterwards was as frequent as a hundred and thirty in the same time, is a striking example. It is very essential to distinguish between this kind of irritation and entonic inflammation, as entirely different remedies are applicable to the two cases.

It is by closely attending to the principles and distinctions here suggested, that some of our most formidable diseases, such as typhus syncoptis, pneumonia typhodes, and typhoid dysentery, have become divested of most of their terrors; and it is only in the same way that we are ever to expect to control malignant cholera, so that it shall cease to be an *opprobrium medicorum*.

Middletown, Ct. September, 1832.

 BOSTON MEDICAL AND SURGICAL JOURNAL.

 BOSTON, OCTOBER 10, 1832.

THE SALTS OF SANGUINARINE.

WHEN we published Professor Tully's account of the medicinal powers of the Salts of Sanguinarine, we requested of him a description of his mode of obtaining them. The reader will find this information on page 140, in the present number.

HARVEIUS DE MOTU CORDIS ET SANGUINIS.

THE history of medical opinion on the subject of the circulation, previous to the discoveries of Harvey, affords rather a curious example of the errors into which even intelligent minds may wander, by permitting theory to guide them instead of observation. During the two centuries which preceded the appearance of this celebrated individual, there existed many anatomists of considerable eminence. The means and advantages enjoyed by them, though less numerous, were the same as those possessed at a later period. They performed experiments on living animals, and dissected them when dead; and even human subjects were not unfrequently furnished them. Their investigations, too, seem to have been well conducted; and their discoveries, both in regard to the structure and use of many parts of the human frame, were unquestionably important: but as far as concerned the functions of the heart and the bloodvessels, scarce a ray of knowledge seems to have dawned upon them; and the avowed doctrines on this subject were even more remote from the truth than those which were advanced by Galen in the 2d century. It was supposed that the chyle, being taken up by the mesenteric veins, was conveyed to the heart, where it was at once converted into blood. This blood was conveyed from the right auricle through the veins into all parts of the body for the purpose of nutrition, and expended in the performance of this function as fast as supplied. The left ventricle and the arteries were regarded as vessels through which air or vital spirits were pumped up through the pores of the skin during the diastole, and sent back during the systole of the heart. The lungs were supposed to be nourished by the left auricle, as the rest of the body was by the right; their main function, however, was thought to be the admission and expulsion of the air; and as the left ventricle must necessarily be supplied with this vital principle, it was naturally concluded that it drew its supply by means of the pulmonary veins. 'Quomodo,' says Fabricius ab Aqua-

pendente, who wrote in 1600, 'quomodo aer in sinistrum cordis ventriculū, qui caloris incendio flagrat pervenire unquam potuisset, nisi venosum illud vas, quasi manum ad ærem accipiendum, a se ad aeris locum cor propagasset?' Such were the orthodox medical doctrines received in the 16th century. It is true that many discoveries had been made, utterly at variance with these doctrines. The arteries had been known to emit blood when wounded; they had been seen to empty themselves when between the ligature and the extremities; while the corresponding part of a vein when compressed, was seen to become swollen and distended. But while these facts had failed to suggest a correct view of the subject, anatomists, by attempting to reconcile them with previously received opinions, had been led into the wildest and most extravagant theories. To furnish a triumphant refutation of these theories, and from this singular mixture of truth and error, of fancy and fact, to draw a clear, simple, harmonious system, was reserved for the genius of one man. Although the true doctrine of the circulation has long since lost its novelty, it may not be wholly uninteresting, as the work of Harvey has never been translated, to notice some of the arguments by which he established it. In the proemium of the work, the author gives a sketch of the prevalent doctrine of the day. He then takes occasion to remark, that even on the authority of Galen, the idea of the arteries being air tubes could not be maintained; for that Galen himself had asserted and proved by experiment, that these vessels naturally contained blood, and blood only. 'Besides,' he proceeds, 'if the arteries draw in and expel air during the diastole and systole of the heart, why do they not do this when one of them is divided by a wound? When the trachea is cut, it is evident to the senses that the air enters and returns by two opposite motions; but after the section of an artery, it is equally evident that blood is protruded by one continuous motion, and that no air either enters or comes out. If the pulse of the arteries cools and ventilates the parts of the body, as the lungs do the heart, why is it commonly said that the arteries carry into every part blood loaded with vital spirits, by which these parts may be warmed, cherished, and maintained? Do these vessels convey heat and cold at the same time, and in the same direction? How great, too, the inconsistency of those who maintain these opinions! They begin by saying that the heart, the arteries, and the lungs, perform the same office; then they affirm, that while the heart produces, and the arteries convey the vital spirits, the lungs exercise neither of these functions; and finally, adopting the opinion of Galen, they maintain that the arteries contain only blood, and that the vital spirits have no place in them. When we find opinions expressed so completely at variance with each other, how can we avoid suspecting the falsehood of them all?'


The first part of the treatise, including seven chapters, is devoted to the motion of the heart, and the passage of blood through the arteries.

For his views on these subjects, though confirmed by his own experiments and observation, he claims no other credit than that of having chosen judiciously from among the theories of his predecessors. That part of his system which he announces as original, is thus introduced in the eighth chapter.

‘ Thus far of the passage of blood from the veins into the arteries, of the course it takes, and how it is transmitted and distributed by the heart ; in regard to which parts those will no doubt agree with me who are disposed to admit the authority of Galen. But now when I come to speak of the amount of the blood passing through the vessels, and the mode of its supply, these things will be so new and unheard of, that I fear I shall bring upon myself not only the ill-will of some, but the enmity of all men. However, the die is cast ; my claim to indulgence is the love of truth, by which I am actuated, and my dependence is on that candor and liberality which characterize learned and intelligent minds. In truth, when I had satisfied myself both from experiments on living animals, and from careful examination of the structure of the heart itself, how great must be the amount of blood discharged from it, and how rapidly it was transmitted through the vessels ; it could not but occur to me that it must have a motion as it were in a circle. This I afterwards ascertained to be the case : that the blood is projected from the heart through the arteries into all parts of the body by the action of the left ventricle, as into the lungs through the pulmonary artery by that of the right ; and that it flows back from these parts to the right auricle, as from the lungs through the pulmonary vein to the left.’

It has been stated, as the generally received opinion at the time of Harvey's discoveries, that the mesenteric veins were the conduits through which the chyle was conveyed to the heart. Perhaps it may excite wonder that so gross an error, connected as it was with the inquiries of this illustrious philosopher, should not have been detected by him. A more remarkable fact, and one less creditable to Harvey, is, that after the lacteal vessels had been discovered, and their use pointed out by the researches of Aselli and Gassendi, he continued obstinately attached to his former opinions, and even wrote a treatise in their defence, in opposition to the correct views which were then beginning to be generally admitted. So little was he able at all times to exhibit that candor, on which, when himself the advocate of a new theory, he relied for success with his medical contemporaries. Harvey died in 1657, at the advanced age of 79, leaving behind him a reputation surpassed by that of few men whose names are recorded in the annals of medicine.

THEORY OF MUSCULAR CONTRACTION.

It is commonly said, in explaining this familiar phenomenon, that the fibrils of the muscle assume new dimensions, being diminished in length and proportionally increased in breadth. Mr. Paxton, in his treatise on anatomy, has somewhat modified the theory by referring the effect to a change of the shape of the fibril from a straight line to one composed of numerous straight lines, forming a certain definite angle with each other, thus : 

This seems to account sufficiently well for the actual increase of size which takes place in the muscle in a transverse direction when called into action ; but there is a peculiar phenomenon which takes place at the same time, and which seems not so much to be connected with the shortening of the fibrils, as a direct effect of the effort itself, whether followed by motion or otherwise. We refer to the hardening of the body of the muscle, an effect which is sufficiently sensible to the hand placed over it, and which ought not to be confounded with the alteration in the direction of the bulk. In fact this hardening occurs when the action of the muscle is prevented by an irresistible obstacle. It also ceases as soon as the effort of volition and the corresponding motion are terminated. Thus in a particular limb, as the arm or the thigh for example, the flexor muscles give no greater sensation of hardness when the limb is flexed than when extended ; although during the flexion the hardness is perfectly evident. This hardening occurs on no occasion more evidently than under the influence of cramp, by which however the muscle is not ordinarily brought into action, so as to produce motion of the affected limb.

DISEASES ON THE SOUTHERN SHORE OF LAKE ERIE.

A NOTE from Dr. E. L. Plympton, of Madison, Geauga Co., Ohio, says :

The diseases of this vicinity (and I believe of the country bordering upon the southern shore of Lake Erie generally) during the past spring, were characterized by an unusually irritable condition of the stomach and bowels. During July, August, and September thus far, cholera morbus (for so we call it) has been much more prevalent than ever known here before. It differs, however, from what we have been accustomed to see, by its being attended with little vomiting or purging, earlier prostration of strength, and the most obstinate spasms of the extremities, which is usually the most unyielding symptom of the disease. At present, dysentery of the most unmanageable character is raging in this and the neighboring towns.

Zoology.—The smell of burning assafoetida has a remarkable effect upon wolves. If a fire be made in the woods, and a portion of this drug be thrown into it, so as to saturate the atmosphere with the odor, the wolves, if any are within reach of the scent, immediately assemble round, howling in the most mournful manner; and such is the remarkable fascination under which they seem to labor, that they will suffer themselves to be shot down rather than quit the spot.—*Featherstonchaugh's Journal.*

Case of Propagation of Ringworm by Contagion.—M. COLLINEAU communicated to the Académie de Médecine the following fact. In an establishment which contains between eleven and twelve hundred females, there is a particular department appropriated for the reception of girls from ten to sixteen years of age, in which they have communication only with each other, and with the persons entrusted with the care of them. In the month of August, 1831, a child with a ringworm on her shoulder, about ten or twelve lines in diameter, was admitted into this establishment. Two months afterwards, one of her companions had a similar ringworm on her arm, and also on her left cheek. At the end of four months, the greater part of the others were affected with the same disease, attacking the arms, thighs, neck, hands, &c. By the 7th February, no more than three out of the seventeen remained who were exempt from the disease; and of these one subsequently, as well as the matron, was affected.

Case of Anasarca cured by Leeches to the Anus.—The following interesting case was communicated to Professor Broussais by M. Roosbroeck. A man was admitted into the hospital of Louvain with his inferior extremities, scrotum, prepuce, and the lower portion of the abdominal parietes, infiltrated. On examination, it was found that all the functions were in a normal condition; no other morbid symptom was discovered except the infiltration; the patient complained of no pain, and said that he never had the slightest symptom of disease. The infiltration appeared suddenly, first commencing in the prepuce. Frictions with squills and digitalis, bloodletting, and diuretic drinks, were tried without effect. M. Donckelaer, who had the patient under his care, suspecting, on account of the patient having habitually taken spirituous liquors, a chronic irritation of the alimentary canal, the symptoms of which were more or less concealed, ordered fifteen leeches to the anus. The day after, the infiltration had much diminished; the same number of leeches was again applied, and the following day the whole of the effusion had disappeared, and the patient entirely recovered.—*Annales de la Médecine Physiologique*, August, 1831.

Whooping Cough.—Dr. Blaud recommends the sulphuret of potash as a remedy for whooping cough. He gives it in doses of ten grains, morning and evening, mixed with a little honey. In six cases of adults in which he administered that remedy, the spasmodic cough, he says, ceased after the second dose, and the catarrhal cough disappeared after a few days.—*Revue Médicale*.

The Communications of Drs. Comstock and Allen have been received.

Whole number of deaths in Boston for the week ending Oct. 6, 32. Males, 15—Females, 17.

Of consumption, 5—stoppage in the bowels, 1—inflammation in the bowels, 3—teething, 3—dysentery, 2—cholera malignant, 2—scurvy, 1—bowel complaint, 1—convulsions, 2—intemperance, 1—drowned, 1—croup, 1—marasmus, 1—lung fever, 1—scarlet fever, 1—canker in the bowels, 1—typhous fever, 2—dropsy in the brain, 1—chronic diarrhœa, 1—apoplexy, 1.

THE BOSTON MEDICAL AND SURGICAL JOURNAL

IS PRINTED AND PUBLISHED EVERY WEDNESDAY, BY CLAPP AND HULL,

At 184 Washington Street, corner of Franklin Street, to whom all communications must be addressed, Post-paid. It is also published in Monthly Parts, on the 1st of each month, each Part containing the numbers of the preceding month, stitched in a cover.—Price \$3.00 per annum in advance, \$3.50 if not paid within six months, and \$4.00 if not paid within the year.—Postage the same as for a newspaper.